

The Effect of the Combination of Allium Extract, Heparin and Allantoin Gel in the Overall Appearance of Post Thyroidectomy Scar

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Abstract: Scar is a part of natural healing process. Lot of treatment options are available today to improve the cosmesis of the scars which includes topical agents like retinoic acids, intralesional injections like triamcinolone, surgical excision, laser treatment etc. Here the study is regarding the use of the combination of three molecules allantoin, heparin and allium and evaluates the efficacy of the combination rather than individual components. 20 patients were included in the treatment group and 20 were included in the control group who did not receive any treatment. Three follow ups done in 4th week, 6th week and 10th week. Patient's feedback scores were recorded using a 4 point ordinal scale. The enquiries were made on the overall appearance including the texture, and softness of the scar. The data collected is analyzed using appropriate statistical methods. The mean score of the treatment group after 4 weeks is 1.6 and that of control is 0.9. There is significant difference between the scores with a p value of 0.006. The score is improved in both the groups after 6 weeks of starting the treatment. After 10 weeks of the treatment the same trend continued and the score became 2.45 in the treatment group and 1.45 in the control group which again showed significant improvement. The combination of the three drugs, Allium cepa extract, Heparin and Allantoin has got significant effect in the improvement of overall appearance of post-surgical scar with three times application daily over a period of 9 weeks.

Keywords: Allium cepa, Heparin, Allantoin, Scar.

INTRODUCTION

Scar is a part of natural healing process. During the healing process the collagen deposition is more disorganized in the scar. Efforts have been made a very long time to improve the appearance of the scars, which also gained popularity for minimal access surgeries. But for some surgeries scar is an unavoidable consequence, even after taking proper precautions. Lot of treatment options are available today to improve the cosmesis of the scars which includes topical agents like retinoic acids, intralesional injections like triamcinolone, surgical excision, laser treatment etc. Here the study is regarding the use of the combination of three molecules allantoin, heparin and allium. Even though separate studies are made regarding the efficacy of each molecule and their therapeutic effects are still controversial. The present study evaluates the efficacy of the combination rather than individual components.

METHODOLOGY

Patients underwent total/hemi thyroidectomy are chosen randomly and divided into two groups. The first one receiving the treatment and the second not receiving any treatment for the scar. The surgical site is allowed to heal for 1 week before starting the treatment.

20 patients were included in the treatment group and 20 were included in the control group who did not receive any treatment. Patients with systemic infections, chronic diseases like diabetes, chronic renal failure, allergic to present drugs were excluded from the study. The patients were followed up for 10 weeks post operatively. Three follow ups done in 4th week, 6th week and 10th week. Patient's feedback scores were recorded using 4 point ordinal scales, 0-no improvement, 1-mild improvement, 2-moderate improvement and 3-good improvement. And the feedback is recorded during each follow up. The enquiries were made on the overall appearance including the texture, and softness of the scar. The data collected is analyzed using appropriate statistical methods.

RESULTS

The mean age of the treatment group is 32 and the control group is 33.75 years. The mean score of the treatment group after 4 weeks is 1.6 and that of control is 0.9. There is significant difference between the scores with a p value of 0.006. The score is improved in both the groups after 6 weeks of starting the treatment, to 2.1 in treatment group and 1 in control group. But the improvement in the treatment group is statistically significant when compared to the control ($p = 0.0002$).

After 10 weeks of the treatment the same trend continued and the score become 2.45 in the treatment group and 1.45 in the control group which again

showed significant improvement in the treatment group ($p=0.00001$).

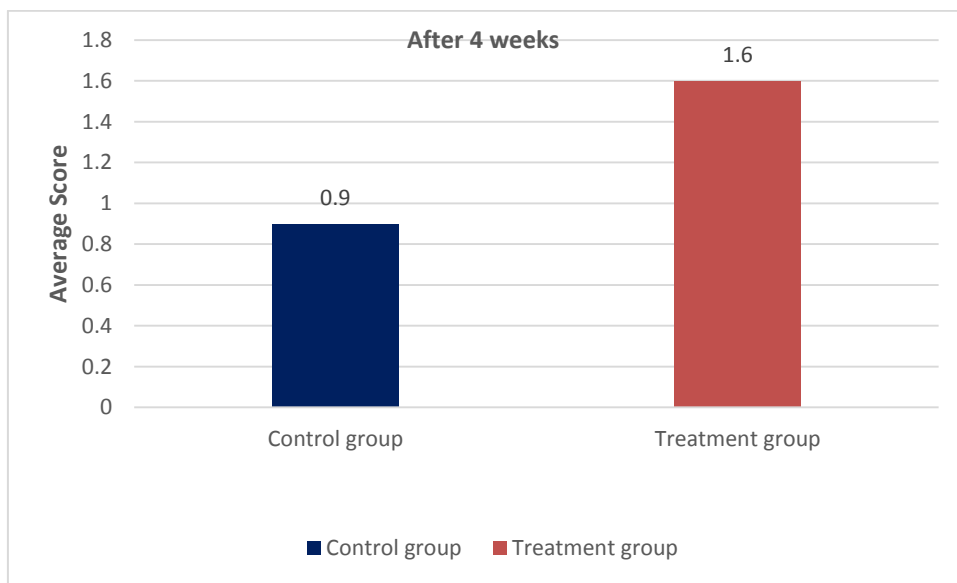


Fig-1: Patient's feedback scores after 4 weeks

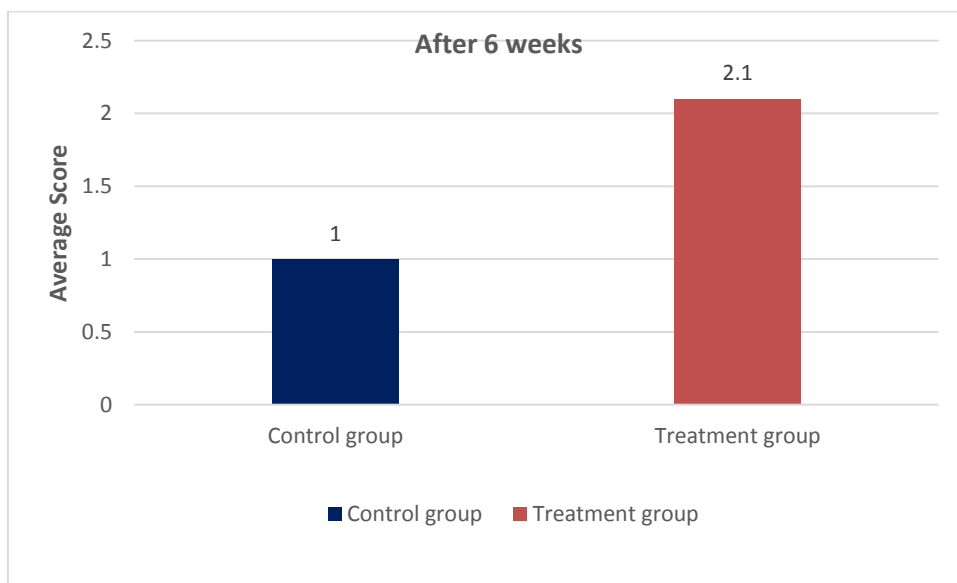


Fig-2: Patient's feedback scores after 6 weeks

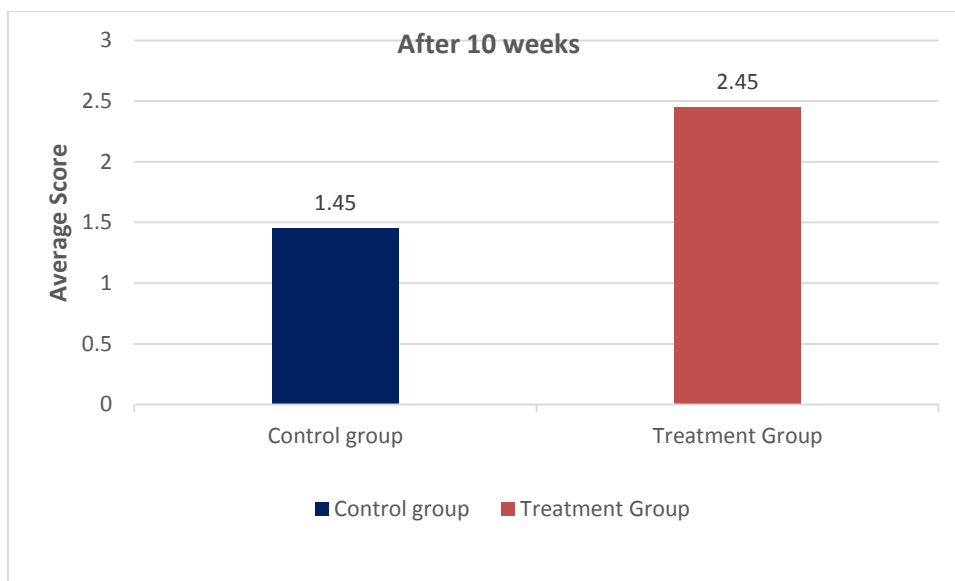


Fig-3: Patient’s feedback scores after 10 weeks

DISCUSSION

A total of 40 patients, 35 females and 5 males were included in the study. 20 were in control group and 20 were in the treatment group. The patient feedback score showed significant improvement in the overall scar appearance when compared to the control group, who did not use any treatment for scars. The exact mechanism of improvement of scars by the combination is unknown and is beyond the scope of this

study. Various mechanisms have been proposed. Allium inhibits fibroblast proliferation and increase collagen organization. Heparin is believed to increase the breakdown of collagen and allantoin is believed to promote epithelialization. The combination of the three drugs, heparin, allium extract and allantoin may have the additive effect, which can be the cause of the significant improvement in the overall scar appearance by the end of the study period that is 10 weeks.

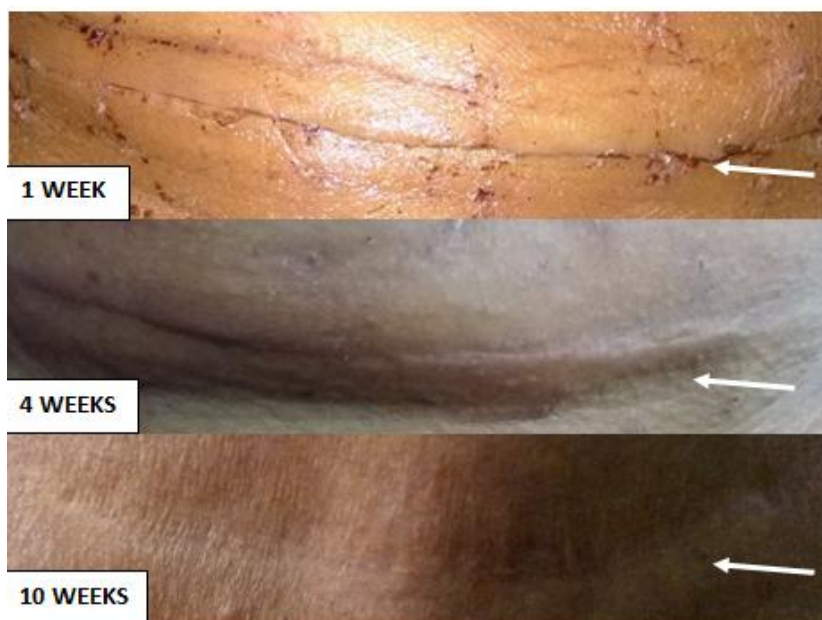


Fig-4: Patient’s scars photos after 1 weeks, 4 weeks and 10 weeks

A recent study by Zoe D. Draelos *et al.* [1] which evaluated the effect of onion extract gel on scars showed significant improvement in the overall appearance of the scar. The results are similar to the present study. Another study by Kumutnart Chanprapaph *et al.* [2] in asian population also concluded that onion extract gel got significant effect in

improving the scar appearance. A.S. Durmus *et al.* [3] in 2012 conducted a study where they used a combination containing heparin and allamtin in rat models showed significant improvement in the scr n 14 days. Another study by Seyed Jalil Mirhosseini *et al.* [4] used a combination containing heparin and onion extract and made a conclusion that go in hand with

above studies. But to make a final conclusion, more number of patients and a long term follow-up is needed, which is the major limitation of the present study.

CONCLUSION

The combination of the three drugs, Allium cepa extract, Heparin and Allantoin has got significant effect in the improvement of overall appearance of post-surgical scar with three times application daily over a period of 9 weeks.

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